

RAW SEQUENCE LISTING

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Application Serial Number: 10/572,711
Source: IFwo
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RAW SEQUENCE LISTING DATE: 03/31/2006
PATENT APPLICATION: US/10/572,711 TIME: 12:11:03

Input Set : A:\11916.0059.PCUS01.ST25.txt
Output Set: N:\CRF4\03292006\J572711.raw

3 <110> APPLICANT: Bogosian, Gregg
4 O'Neill, Julia P.
5 Smith, Hong Q.
7 <120> TITLE OF INVENTION: Prevention of Incorporation of Non-Standard Amino
Acids into
8 Protein
10 <130> FILE REFERENCE: 11916.0059.PCUS01
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/572,711
C--> 12 <141> CURRENT FILING DATE: 2006-03-20
12 <150> PRIOR APPLICATION NUMBER: PCT/US 2004/031224
13 <151> PRIOR FILING DATE: 2004-09-23
15 <150> PRIOR APPLICATION NUMBER: US 60/505,807
16 <151> PRIOR FILING DATE: 2003-09-25
18 <160> NUMBER OF SEQ ID NOS: 16
20 <170> SOFTWARE: PatentIn version 3.3
22 <210> SEQ ID NO: 1
23 <211> LENGTH: 1344
24 <212> TYPE: DNA
25 <213> ORGANISM: Escherichia coli
27 <400> SEQUENCE: 1
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30 caaaccgagt tcgcgcgaagc cgttcgtgaa gtaatgacca cactctggcc ttttcttgaa 120
32 caaaaatccaa aatatcgcca gatgtcatta ctggagcgctc tgggtgaacc ggagcgcg 180
34 atccagtttc gcgtggatag ggttggatgt cgcaaccaga tacaggtcaa ccgtgcattgg 240
36 cgtgtcagttc tcaagctctgc catcgccccg tacaaggcg gtatgcgtt ccatccgtca 300
38 gttaaccttt ccattctcaa attcctcgcc ttgttgcacaaa ctttcaaaaaa tgccctgact 360
40 actctgccga tgggcgggtgg taaaggcgcc agcgatttcg atccgaaagg aaaaagcgaa 420
42 ggtgaagtga tgcgttttg ccaggcgctg atgactgaac tttatcgccaa cctggcg 480
44 gataccgacg ttccggcagg ttagatcggtt gttgggtggc gtgaagtgcg ctttatggcg 540
46 gggatgatga aaaagctctc caacaatacc gcctgcgtt tcaccggtaa gggccttca 600
48 tttggcggca gtcttattcg cccggaaatcg accggctacg gtctggtttta tttcacagaa 660
50 gcaatgctaa aacgccacgg tatgggtttt gaagggtatgc ggcgttccgt ttctggctcc 720
52 ggcaacgtcg cccagtgacg tattcgaaaaa gcgatggaaat ttgggtgcgt tttatggcg 780
54 gcgtcagact ccagcggcac tgttagttgtt gaaaggcgat tcacgaaaga gaaactggca 840
56 cgtttatcg aaatcaaagc cagccgcgtt ggtcgatgg cagattacgc caaagaattt 900
58 ggtctggctt atctcgaaagg ccaacagccg tggctctac cggttgatat cggccctgcct 960
60 tgcgccaccc agaatgaact ggtatgttgc gcccgcgtt agttatcgca taatggcg 1020
62 aaagccgtcg ccgaaggggc aaatatcgcc accaccatcg aagcgactga actgttccag 1080
64 caggcaggcg tactatttgc accgggtaaa gcccgtatcg ctgggtggcgat cgctacatcg 1140
66 ggcctggaaa tggcacaaaaaa cgctgcgcgc ctgggtggaa aagccgagaa agttgacgca 1200
68 cgtttgcattt acatcatgtt ggtatccac catgcctgtt ttgagcatgg tgggtgaaggt 1260
70 gagcaaacca actacgtgca gggcgcaac attgcccgtt ttgtgaaggt tgccgatgcg 1320
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75 <210> SEQ ID NO: 2

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76 <211> LENGTH: 447
77 <212> TYPE: PRT
78 <213> ORGANISM: Escherichia coli
80 <400> SEQUENCE: 2
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86 Arg Asp Pro Asn Gln Thr Glu Phe Ala Gln Ala Val Arg Glu Val Met
87 20 25 30
90 Thr Thr Leu Trp Pro Phe Leu Glu Gln Asn Pro Lys Tyr Arg Gln Met
91 35 40 45
94 Ser Leu Leu Glu Arg Leu Val Glu Pro Glu Arg Val Ile Gln Phe Arg
95 50 55 60
98 Val Val Trp Val Asp Asp Arg Asn Gln Ile Gln Val Asn Arg Ala Trp
99 65 70 75 80
102 Arg Val Gln Phe Ser Ser Ala Ile Gly Pro Tyr Lys Gly Gly Met Arg
103 85 90 95
106 Phe His Pro Ser Val Asn Leu Ser Ile Leu Lys Phe Leu Gly Phe Glu
107 100 105 110
110 Gln Thr Phe Lys Asn Ala Leu Thr Thr Leu Pro Met Gly Gly Gly Lys
111 115 120 125
114 Gly Gly Ser Asp Phe Asp Pro Lys Gly Lys Ser Glu Gly Glu Val Met
115 130 135 140
118 Arg Phe Cys Gln Ala Leu Met Thr Glu Leu Tyr Arg His Leu Gly Ala
119 145 150 155 160
122 Asp Thr Asp Val Pro Ala Gly Asp Ile Gly Val Gly Arg Glu Val
123 165 170 175
126 Gly Phe Met Ala Gly Met Met Lys Lys Leu Ser Asn Asn Thr Ala Cys
127 180 185 190
130 Val Phe Thr Gly Lys Gly Leu Ser Phe Gly Gly Ser Leu Ile Arg Pro
131 195 200 205
134 Glu Ala Thr Gly Tyr Gly Leu Val Tyr Phe Thr Glu Ala Met Leu Lys
135 210 215 220
138 Arg His Gly Met Gly Phe Glu Gly Met Arg Val Ser Val Ser Gly Ser
139 225 230 235 240
142 Gly Asn Val Ala Gln Tyr Ala Ile Glu Lys Ala Met Glu Phe Gly Ala
143 245 250 255
146 Arg Val Ile Thr Ala Ser Asp Ser Ser Gly Thr Val Val Asp Glu Ser
147 260 265 270
150 Gly Phe Thr Lys Glu Lys Leu Ala Arg Leu Ile Glu Ile Lys Ala Ser
151 275 280 285
154 Arg Asp Gly Arg Val Ala Asp Tyr Ala Lys Glu Phe Gly Leu Val Tyr
155 290 295 300
158 Leu Glu Gly Gln Gln Pro Trp Ser Leu Pro Val Asp Ile Ala Leu Pro
159 305 310 315 320
162 Cys Ala Thr Gln Asn Glu Leu Asp Val Asp Ala Ala His Gln Leu Ile
163 325 330 335
166 Ala Asn Gly Val Lys Ala Val Ala Glu Gly Ala Asn Met Pro Thr Thr
167 340 345 350
170 Ile Glu Ala Thr Glu Leu Phe Gln Ala Gly Val Leu Phe Ala Pro

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171	355	360	365	
174	Gly Lys Ala Ala Asn Ala Gly Gly Val Ala Thr Ser Gly Leu Glu Met			
175	370	375	380	
178	Ala Gln Asn Ala Ala Arg Leu Gly Trp Lys Ala Glu Lys Val Asp Ala			
179	385	390	395	400
182	Arg Leu His His Ile Met Leu Asp Ile His His Ala Cys Val Glu His			
183	405	410	415	
186	Gly Gly Glu Gly Glu Gln Thr Asn Tyr Val Gln Gly Ala Asn Ile Ala			
187	420	425	430	
190	Gly Phe Val Lys Val Ala Asp Ala Met Leu Ala Gln Gly Val Ile			
191	435	440	445	
194	<210> SEQ ID NO: 3			
195	<211> LENGTH: 1344			
196	<212> TYPE: DNA			
197	<213> ORGANISM: Escherichia coli			
199	<400> SEQUENCE: 3			
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202	caaaccgagt tcgcgcaga cgttcgtgaa gtaatgacca cactctggcc ttttcttgaa	120		
204	caaaatccaa aatatcgcca gatgtcatta ctggagcgctc tggttgaacc ggagcgcgtg	180		
206	atccagtttc gcgtggatg gtttgcgtat cgcaaccaga tacaggtcaa ccgtgcata	240		
208	cgtgtcagt tcagctctgc catcgccccg tacctggcg gtatgcgtt ccattccgtca	300		
210	gttaaaccttt ccattctcaa attcctcgcc tttgaacaaa ctttcaaaaaa tgccctgact	360		
212	actctgccga tgggcgttgg taaaggcgcc agcgatttcg atccgaaagg aaaaagcgaa	420		
214	ggtaagtga tgcgttttg ccaggcgctg atgactgaac ttttatcgcca cctggcg	480		
216	gataccgacg ttccggcagg tttatcgccc gttgggttc gtgaagtcgg ctttatggcg	540		
218	ggatgtatga aaaagctctc caacaatacc gcctgcgtt tcaccggtaa gggccttca	600		
220	tttggcggca gtcttattcg cccggaaagct accggctacg gtctggttt tttcacagaa	660		
222	gcaatgtcaa aacggccacgg tatgggtttt gaagggtatgc gcggttccgt ttctggctcc	720		
224	ggcaacgtcg cccagtagcgtc tatcgaaaaa gcatgttgc ttgggtgcgt tttatgcact	780		
226	gcgtcagact ccagcggcac tttatgtatgc gaaaggcgat tcacgaaaga gaaactggca	840		
228	cgtcttatcg aaatcaaaggc cagccgcgtt ggtcgatgg cagattacgc caaagaattt	900		
230	gttctggctt atctcgaaagg ccaacagccg tttatcgatc cggatgtatgc tttatggctcc	960		
232	tgcgccaccc agaatgaact ggtatgtac gcccgcgtt agcttacatcg taatggcg	1020		
234	aaagccgtcg ccgaaggggc aaatatgcgc accaccatcg aagcgactga actgttccag	1080		
236	caggcaggcg tactattgc accgggtaaa gcccgtatcg ctgggtggcg ctgtacatcg	1140		
238	ggcctggaaa tggcacaagg ccgtcgccgc ctgggtggaa aagccgagaaa agttgacgca	1200		
240	cgtttgcatac acatcatgtc ggtatccac catgcgttgc ttggatgttgg tttatggcg	1260		
242	gagcaaacca actacgtgcgaa gggcgcaac attggcggtt ttgtgaaggt tgccgatgcg	1320		
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249	<212> TYPE: PRT			
250	<213> ORGANISM: Escherichia coli			
252	<400> SEQUENCE: 4			
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255	1 5 10 15			
258	Arg Asp Pro Asn Gln Thr Glu Phe Ala Gln Ala Val Arg Glu Val Met			
259	20 25 30			
262	Thr Thr Leu Trp Pro Phe Leu Glu Gln Asn Pro Lys Tyr Arg Gln Met			

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263	35	40	45
266	Ser Leu Leu Glu Arg Leu Val Glu Pro Glu Arg Val Ile Gln Phe Arg		
267	50	55	60
270	Val Val Trp Val Asp Asp Arg Asn Gln Ile Gln Val Asn Arg Ala Trp		
271	65	70	75
274	Arg Val Gln Phe Ser Ser Ala Ile Gly Pro Tyr Leu Gly Gly Met Arg		80
275	85	90	95
278	Phe His Pro Ser Val Asn Leu Ser Ile Leu Lys Phe Leu Gly Phe Glu		
279	100	105	110
282	Gln Thr Phe Lys Asn Ala Leu Thr Thr Leu Pro Met Gly Gly Gly Lys		
283	115	120	125
286	Gly Gly Ser Asp Phe Asp Pro Lys Gly Lys Ser Glu Gly Glu Val Met		
287	130	135	140
290	Arg Phe Cys Gln Ala Leu Met Thr Glu Leu Tyr Arg His Leu Gly Ala		
291	145	150	155
294	160	165	175
298	Gly Phe Met Ala Gly Met Met Lys Lys Leu Ser Asn Asn Thr Ala Cys		
299	180	185	190
302	200	205	
303	Val Phe Thr Gly Lys Gly Leu Ser Phe Gly Gly Ser Leu Ile Arg Pro		
306	210	215	220
310	Glu Ala Thr Gly Tyr Gly Leu Val Tyr Phe Thr Glu Ala Met Leu Lys		
311	225	230	235
314	240	245	250
315	255	260	265
318	270	275	
319	280	285	
322	Gly Phe Thr Lys Glu Lys Leu Ala Arg Leu Ile Glu Ile Lys Ala Ser		
323	290	295	300
326	300	310	315
327	320	325	330
330	335	340	345
331	340	345	350
334	350	355	360
335	365	370	375
338	380	385	390
339	395	400	405
342	410	415	420
343	425	430	
346	Gly Lys Ala Ala Asn Ala Gly Gly Val Ala Thr Ser Gly Leu Glu Met		
347	355	360	365
350	370	375	380
351	385	390	395
354	400	405	410
355	415	420	425
358	430	435	
359	Gly Gly Glu Gly Glu Gln Thr Asn Tyr Val Gln Gly Ala Asn Ile Ala		

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362	Gly	Phe	Val	Lys	Val	Ala	Asp	Ala	Met	Leu	Ala	Gln	Gly	Val	Ile	
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372	atgacattag	aaatcttcga	atacttagaa	aaatatgatt	atgagcaagt	agtattttgt									60	
374	caagataaaag	aatctggttt	aaaagcaatt	attgcaattc	atgataacaac	acttggaccg									120	
376	gctcttggtg	gaacaagaat	gtggacatat	gattctgaag	aagcggcgat	tgaagatgca									180	
378	ttgcgtcttg	caaaaaggat	gacataaaaa	aacgcagcag	ctggtttaaa	cttaggttgt									240	
380	gcgaaaacag	taattatcgg	tgatcctcg	aaagataaga	gcbaagcaat	gttccgtgca									300	
382	ctaggacgtt	atatccaagg	actaaacgga	cgttacatta	cagctgaaga	tgttggtaca									360	
384	acagtagatg	atatggatat	tatccatgaa	gaaactgact	ttgttaacagg	tatctcacca									420	
386	tcattcgggtt	cttctggtaa	cccatctccg	gttaactgcat	acgggttta	ccgtggatgt									480	
388	aaagcagctg	caaaaagaagc	tttcggtact	gacaatttag	aaggaaaagt	aattgctgtt									540	
390	caaggcgttg	gtaacgtagc	atatcaccta	tgcaaacatt	tacacgctga	aggagcaaaa									600	
392	ttaatcgtta	cagatattaa	taaagaagct	gtacaacgtg	ctgtagaaga	attcgggtgca									660	
394	tcagcagttg	aaccaaata	aatttacggt	gttgaatg	atatttacgc	accatgtgca									720	
396	ctaggcgtt	ca	gat	taat	gta	tgaaactatt	ccacaactta	aagcaaaagt	aatcgcaggt						780	
398	tctgcaata	accaattaaa	agaagatcgt	catggtgaca	tcattcatga	aatgggtatt									840	
400	gtatacgcac	cagattatgt	aattaatgca	ggtggcgtaa	ttaacgtagc	agacgaatta									900	
402	tatggataca	atagagaacg	tgcaactaaa	cgtgttgt	at	tttatg	ga	cacgattgca							960	
404	aaagtaatcg	aaatttcaaa	acgcgttgc	atagcaactt	atgttagcggc	agatcgtcta									1020	
406	gctgaagagc	gcattgcaag	cttgaagaat	tctcgtagc	cttacttacg	caacggtcac									1080	
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422	Val	Val	Phe	Cys	Gln	Asp	Lys	Glu	Ser	Gly	Leu	Lys	Ala	Ile	Ile	Ala
423						20			25					30		
426	Ile	His	Asp	Thr	Thr	Leu	Gly	Pro	Ala	Leu	Gly	Gly	Thr	Arg	Met	Trp
427								35		40			45			
430	Thr	Tyr	Asp	Ser	Glu	Glu	Ala	Ala	Ile	Glu	Asp	Ala	Leu	Arg	Leu	Ala
431							50		55			60				
434	Lys	Gly	Met	Thr	Tyr	Lys	Asn	Ala	Ala	Gly	Leu	Asn	Leu	Gly	Gly	
435							65		70		75			80		
438	Ala	Lys	Thr	Val	Ile	Ile	Gly	Asp	Pro	Arg	Lys	Asp	Ser	Glu	Ala	
439								85		90			95			
442	Met	Phe	Arg	Ala	Leu	Gly	Arg	Tyr	Ile	Gln	Gly	Leu	Asn	Gly	Arg	Tyr
443								100		105			110			
446	Ile	Thr	Ala	Glu	Asp	Val	Gly	Thr	Thr	Val	Asp	Asp	Met	Asp	Ile	Ile
447								115		120			125			
450	His	Glu	Glu	Thr	Asp	Phe	Val	Thr	Gly	Ile	Ser	Pro	Ser	Phe	Gly	Ser
451							130		135			140				

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L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date